

$n \text{ \& } p = 0-10$
 $Z = O, CH_2, \text{ or } NH$

wherein Y represents a nanocrystal and X represents an organic compound capable of bonding to a detectable substance;

R is a bond or is selected from the group consisting of:

SH,

$O(CH_2(n)O)_nSH$,

$NH(CH_2(n)O)_nSH$,

$NH(CH_2(n)NH)SH$,

$S(CH_2(n)O)_nSH$, and

$S(CH_2(n)S)SH$; n is 1-10, with S being attached to the nanocrystal;

R₂ is a bond or selected from the group consisting of

carbonyl,

NH, SH,

CONH,

COO,

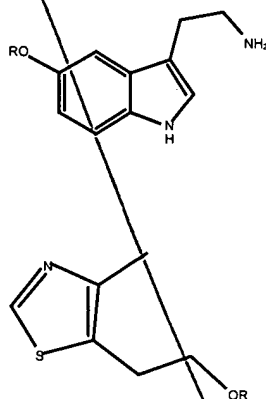
S,

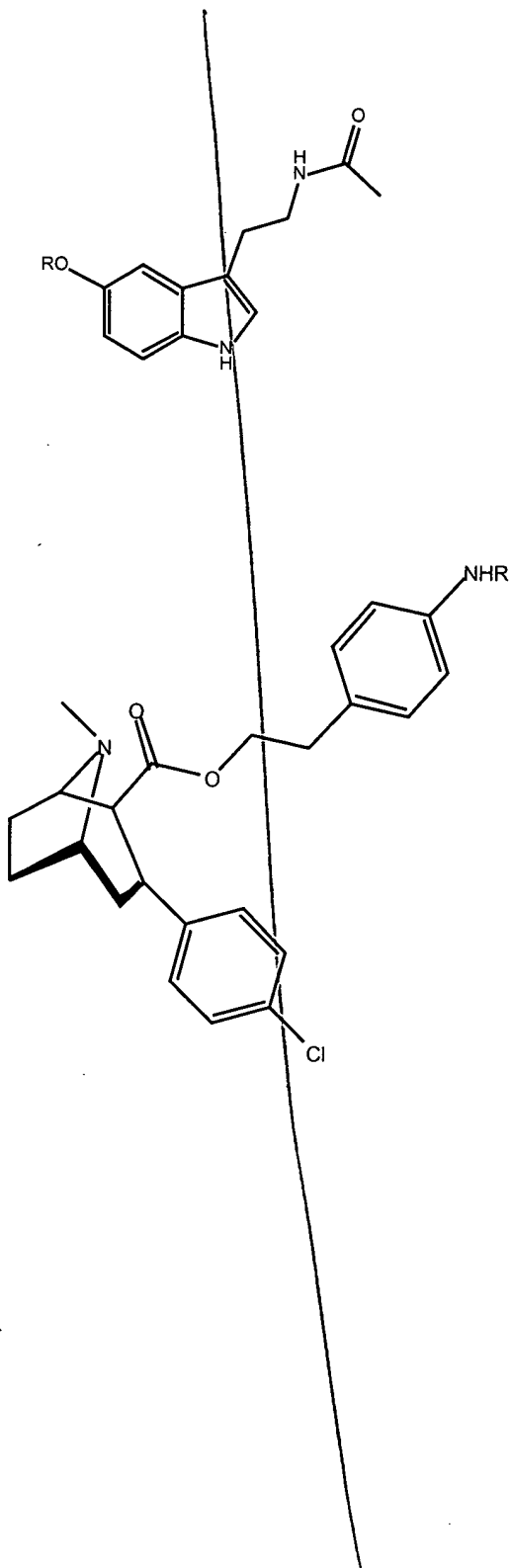
C₁₋₁₀ alkyl,

carbamate, and thiocarbamate; and wherein

when n and p are 1 or more, the resulting carbon or carbon chain may be substituted.

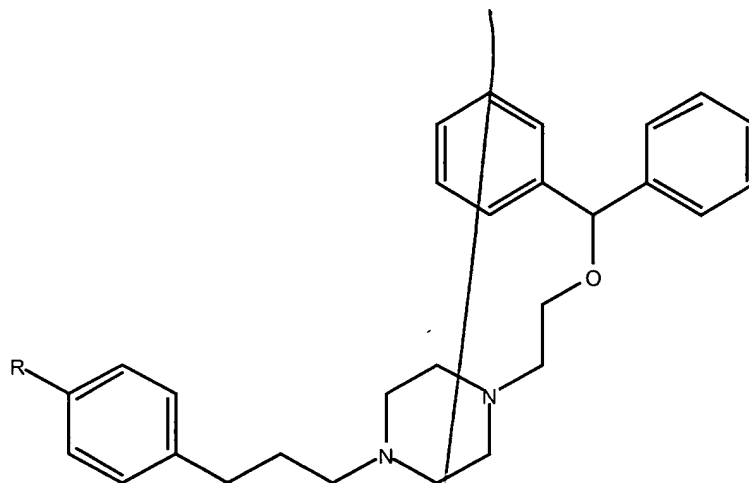
Claim 10 (Amended): The nanocrystal compound of claim 8, wherein the organic compound is selected from the group consisting of:





b2

a2



A2
cont

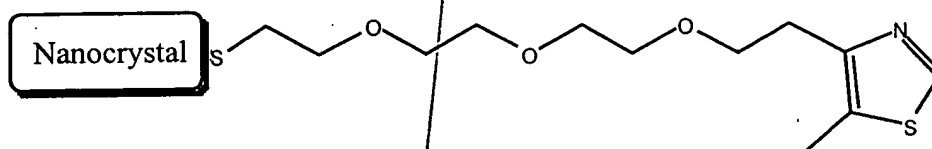
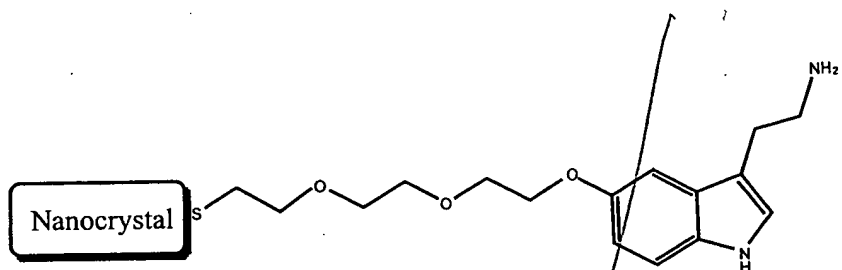
wherein R represents the attachment point to the nanocrystal compound.

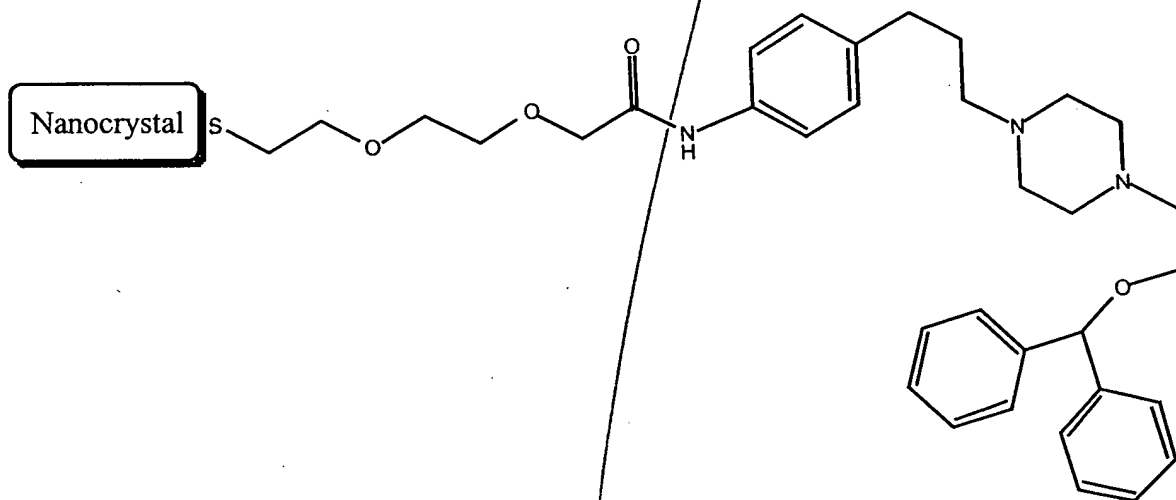
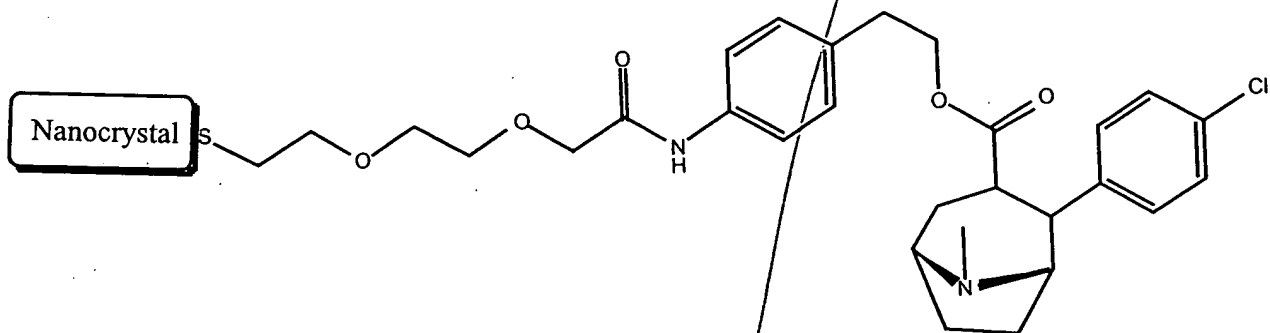
A3

Claim 13 (Amended): The compound of claim 8, wherein the nanocrystal is selected from the group consisting of CdSe, CdS, PbSe, PbS, and CdTe nanocrystals.

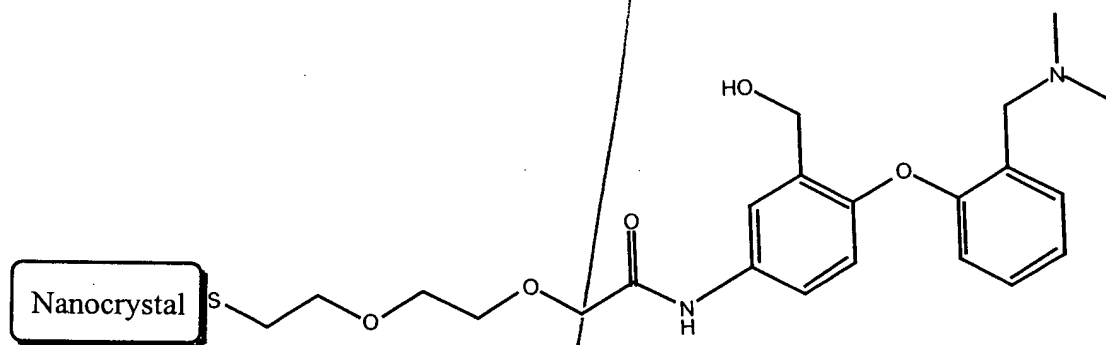
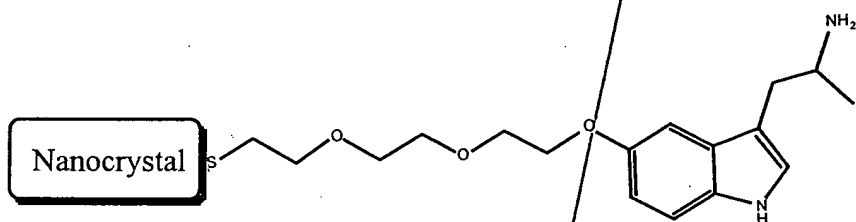
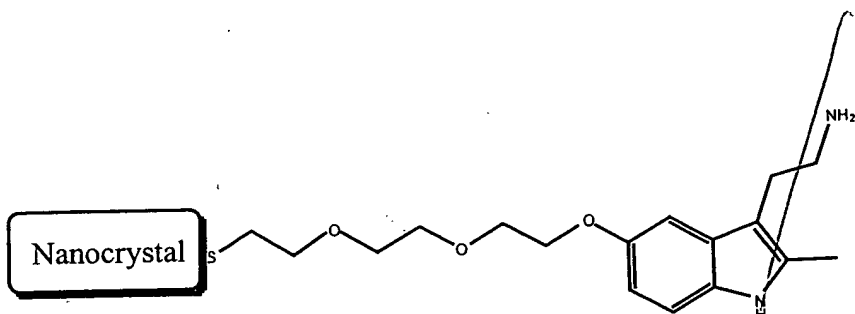
A4

Claim 16 (Amended): The compound of claim 8, selected from the group consisting of:

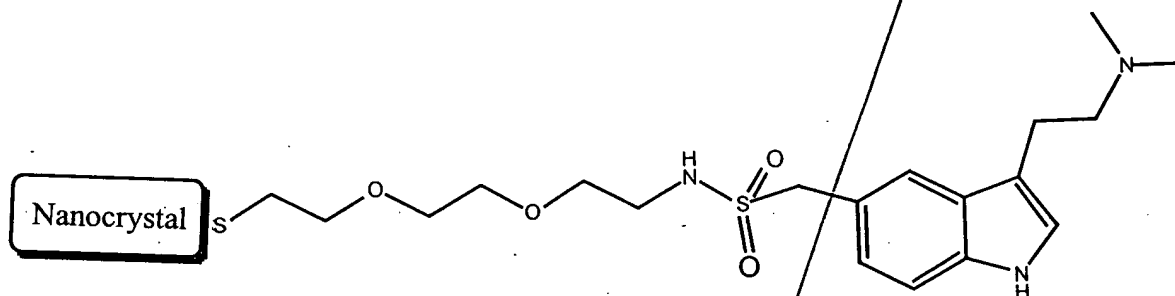
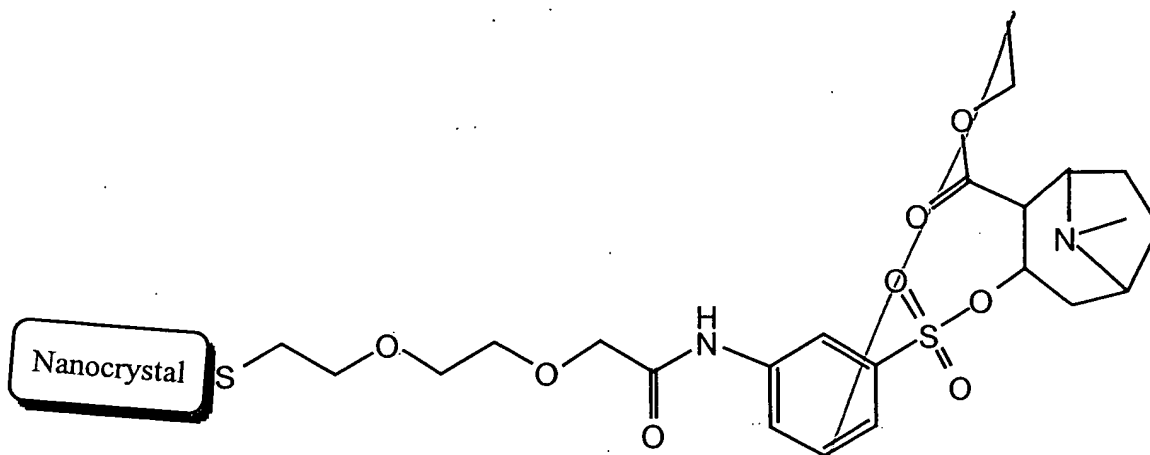




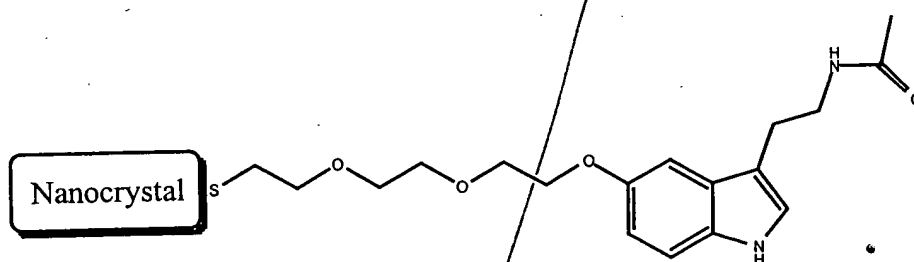
A4
B2



Q4
b2
cont



and



b2
A4
conold